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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,280	01/22/2001	Hawley Rising III	80398P325	2031

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EXAMINER	
BOOKER, KELVIN E	

ART UNIT	PAPER NUMBER
2121	10

DATE MAILED: 03/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/767,280	RISING, HAWLEY	
	Examiner	Art Unit	
	Kelvin E Booker	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *7,9,18 and 20* is/are allowed.

6)☒ Claim(s) *1-6,8,10-17 and 19* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7,9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Detailed Office Action*.

DETAILED ACTION

Response to Amendment

1. In Amendment "A", filed January 5, 2004 (see paper no. 8), the specification has been amended to clarify grammatical and typographical errors; and two separate IDSs (see paper no. 5 and paper no. 7) have been submitted.

2. **Claims 1-20** are presented for further examination.

Response to Arguments

3. Applicant's arguments filed January 5, 2004 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-6, 8, 10-17 and 19** are rejected under 35 U.S.C. 102(b) as being anticipated by Sahiner et al., "Interative Inversion of the Radon Transform" [hereafter Sahiner].

As per claim 1, Sahiner teaches of a method of designing a set of wavelet basis, the method comprising:

A. constructing a neural network of arbitrary complexity using a discrete and finite Radon transform (see page 112, paragraph two: "We have recently...the constrained region");

B. designing an input wavelet to fit a particular problem (see page 113, section Image *Reconstruction Using Wavelet Constraints*, especially paragraphs one and two on page 113: "We now consider...the constrained region");

C. feeding an input wavelet prototype designed to fit a particular problem through the neural network and its back-propagation to produce an output (see section Iterative Image *Reconstruction Using Wavelet Constraints* on pages 116-117, especially page 117, paragraph three, "At each iteration...for comparison"); and

D. modifying an input function of the neural network using the output (see page 112, paragraph two: "We have shown...the constrained region").

As per claim 2, Sahiner teaches of a method wherein constructing the neural network comprises:

A. back-projecting the Radon transform to a point (see section *Iterative Image Reconstruction Using Wavelet Constraints* on pages 116-117, especially page 117, paragraph three, "At each iteration...for comparison"); and

B. subtracting a global average function of the point (see page 112, paragraph two: "We have shown...the constrained region").

As per claim 3, Sahiner teaches of a method wherein the global average function is dependent on the transform geometry and may be varied by varying the interconnect structure of the neural network (see page 112, paragraph two: the global function depends upon the spatial variances of the image).

As per claim 4, Sahiner teaches of a method wherein the transform is dual to the network (see page 112, paragraph two).

As per claim 5, Sahiner teaches of a method wherein the transform is weighted to a desired template function (see section *The Discretized Inverse Radon Transform*, especially paragraph one on page 112 through paragraph two on page 113: "The basic reconstruction ...Radon kernel [w]").

As per claim 6, Sahiner teaches of a method wherein modifying the input function comprises subtracting a difference between the input and the output from the input wavelet prototype and moving the input function in the opposite direction from the difference so that the difference converges to zero (see page 112, paragraph two: "We have recently...satisfies these constraints").

As per claim 8, Sahiner teaches of a method wherein the wavelet bases are used to compress data selected from the group consisting of images, multidimensional data, or spatiotemporal data (see page 112, paragraphs one and two).

As per claims 10 and 11, the same limitations are subjected to in claim one, therefore the same rejections apply (see claim one above).

As per claims 12-17 and 19, the same limitations are subjected to in claims 1-6 and eight, respectively, therefore the same rejections apply (see claims 1-6 and eight above).

6. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Allowable Subject Matter

7. **Claims 7, 9, 18 and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

As per claims 7 and 18, the cited prior art fails to explicitly teach of a method and means for designing a set of wavelet basis consistent with the limitations of independent claims one and 12, respectively, wherein a central equation used for the Radon transform is selected from a group of equations consisting of a Gindikin or Bolker equation.

As per claims 9 and 20, the cited prior art fails to explicitly teach of a method and means for designing a set of wavelet basis consistent with the limitations of claims one, four and five and claims 12, 15 and 16, respectively, wherein template functions is spherical.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

K.E.B.

Art Unit 2121

March 5, 2004